

WHAT IS CLAIMED IS:

1. An oxygen scavenging packet for use in a modified atmosphere package, comprising:

- (a) a plurality of side walls defining an enclosed space;
- 5 (b) an oxygen absorber within the enclosed space, said oxygen absorber comprising iron, silica gel, a carbon dioxide generator, and an electrolyte; and
- (c) a liquid oxygen uptake accelerator located within a separate compartment within the enclosed space, said oxygen uptake accelerator comprising
10 water,

wherein said separate compartment within the enclosed space is capable of being ruptured; wherein the contents of said separate compartment consist essentially of the liquid oxygen uptake accelerator;

said liquid oxygen uptake accelerator which is present in said packet in an
15 amount in the range of from about 0.2 ml to about 0.8 ml for each approximately 2.5 grams of iron wherein a packet containing approximately 5 grams of iron is capable of reducing the oxygen concentration in a quart-sized modified atmosphere package consisting essentially of air having about 2% oxygen and about 20% carbon dioxide to less than about 0.5% oxygen in about 90 minutes at about 34°F immediately after the
20 oxygen absorber comes into contact with the oxygen uptake accelerator.

2. The oxygen scavenging packet of claim 1, wherein said oxygen uptake accelerator is present in said packet in an amount between about 0.3 ml and about 0.7 ml per approximately 2.5 grams of said iron.

3. The oxygen scavenging packet of claim 1, wherein approximately 0.4 to
25 about 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

4. The oxygen scavenging packet of claim 3, wherein approximately 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

30 5. The oxygen scavenging packet of claim 1 wherein said iron is electrolytically annealed and reduced.

6. The oxygen scavenging packet of claim 1, wherein said oxygen uptake accelerator is contained within a frangible capsule and the oxygen uptake accelerator is introduced directly onto the oxygen absorber by rupturing the frangible capsule.

35 7. The oxygen scavenging packet of claim 1, wherein said oxygen uptake accelerator is contained within a bibulous wick, wherein said wick extends from the exterior of said packet, through at least one of said plurality of walls and into said enclosed space.

8. The oxygen scavenging packet of claim 1, wherein said electrolyte is
40 chosen from the group consisting of acids and salts.

9. The oxygen scavenging packet of claim 8, wherein said acid is acetic acid or citric acid.

10. The oxygen scavenging packet of claim 1, wherein said salt is a metal salt.

11. The oxygen scavenging packet of claim 10, wherein said salt is a copper
45 salt.

12. The oxygen scavenging packet of claim 1, wherein said salt is selected from the group consisting of NaCl, CaCl₂, and MgCl₂.

13. The oxygen scavenging packet of claim 1, wherein said silica gel is impregnated with the carbon dioxide generator.

50 14. A method for reducing the oxygen concentration in a modified atmosphere package which comprises an oxygen sensitive material, comprising the steps of:

(a) placing an oxygen scavenging packet in the package, said oxygen scavenging packet comprising:

55 (i) a plurality of side walls defining an enclosed space; and
(ii) an oxygen absorber within the enclosed space, said oxygen absorber comprising iron, silica gel, a carbon dioxide generator, and an electrolyte;

(b) introducing a liquid oxygen uptake accelerator comprising water directly onto said oxygen absorber; and

60 (c) immediately sealing the modified atmosphere package;

wherein the amount of liquid oxygen uptake accelerator which is introduced into said packet is an amount in the range of from about 0.2 mL and about 0.8 mL for each 2.5 grams of iron.

15. The method of claim 14, wherein said oxygen uptake accelerator is
65 present in said packet in an amount between about 0.3 ml and about 0.7 ml per approximately 2.5 grams of said iron.

16. The method of claim 15, wherein approximately 0.4 to about 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

70 17. The method of claim 16, wherein approximately 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

18. The method of claim 14 wherein the iron is electrolytically annealed and reduced.

19. The method of claim 14, wherein said oxygen uptake accelerator is
75 contained within a frangible capsule and the oxygen uptake accelerator is introduced directly onto the oxygen absorber by rupturing the frangible capsule.

20. The method of claim 14, wherein said oxygen uptake accelerator is contained within a bibulous wick, wherein said wick extends from the exterior of said packet, through at least one of said plurality of walls and into said enclosed space.

80 21. The method of claim 14, wherein said oxygen uptake accelerator further comprises an acid.

22. The oxygen scavenging packet of claim 14, wherein said electrolyte is chosen from the group consisting of acids and salts.

23. The oxygen scavenging packet of claim 22, wherein said acid is acetic
85 acid or citric acid.

24. The oxygen scavenging packet of claim 22, wherein said salt is a metal salt.

25. The oxygen scavenging packet of claim 24, wherein said salt is a copper salt.

90 26. The oxygen scavenging packet of claim 22, wherein said salt is selected from the group consisting of NaCl, CaCl₂, and MgCl₂.

27. The method of claim 14, wherein said silica gel is impregnated with the carbon dioxide generator.

28. The method of claim 14, wherein said packet further comprises a means
95 for introducing said liquid oxygen uptake accelerator directly onto the oxygen absorber.

29. The method of claim 14, wherein said step of introducing said oxygen uptake accelerator directly onto said oxygen absorber includes injecting said oxygen uptake accelerator onto said oxygen absorber.

30. The method of claim 29, wherein said step of introducing said oxygen
100 uptake accelerator directly onto said oxygen absorber is carried out using a syringe.

31. The method of claim 28, wherein said step of introducing said oxygen uptake accelerator directly onto said oxygen absorber includes placing into said packet a frangible capsule containing the oxygen uptake accelerator, wherein the oxygen uptake accelerator is introduced directly onto the oxygen absorber by rupturing the frangible
105 capsule.

32. A method for minimizing metmyoglobin formation in fresh meat which is contained within a modified atmosphere package, comprising the steps of:

- (a) placing an oxygen scavenging packet in the package, said oxygen scavenging packet comprising:
110 (i) a plurality of side walls defining an enclosed space; and
(ii) an oxygen absorber within the enclosed space, said oxygen absorber comprising iron, silica gel, a carbon dioxide generator, and an electrolyte;
- (b) introducing a liquid oxygen uptake accelerator comprising water directly onto said oxygen absorber; and
- 115 (c) immediately sealing the modified atmosphere package;

wherein the amount of liquid oxygen uptake accelerator which is introduced into said packet is an amount in the range of from about 0.2 mL and about 0.8 mL for each 2.5 grams of iron.

33. The method of claim 32, wherein said oxygen uptake accelerator is
120 present in said packet in an amount between about 0.3 ml and about 0.7 ml per approximately 2.5 grams of said iron.

34. The method of claim 33, wherein approximately 0.4 to about 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

125 35. The method of claim 34, wherein approximately 0.6 ml of said oxygen uptake accelerator is present in said packet per approximately 2.5 grams of said iron.

36. The method of claim 32 wherein the iron is electrolytically annealed and reduced.

130 37. The method of claim 32, wherein said oxygen uptake accelerator is contained within a frangible capsule and the oxygen uptake accelerator is introduced directly onto the oxygen absorber by rupturing the frangible capsule.

38. The method of claim 32, wherein said oxygen uptake accelerator is contained within a bibulous wick, wherein said wick extends from the exterior of said packet, through at least one of said plurality of walls and into said enclosed space.

135 39. The method of claim 32, wherein said oxygen uptake accelerator further comprises an acid.

40. The oxygen scavenging packet of claim 32, wherein said electrolyte is chosen from the group consisting of acids and salts.

140 41. The oxygen scavenging packet of claim 40, wherein said acid is acetic acid or citric acid.

42. The oxygen scavenging packet of claim 40, wherein said salt is a metal salt.

43. The oxygen scavenging packet of claim 42, wherein said salt is a copper salt.

145 44. The oxygen scavenging packet of claim 40, wherein said salt is selected from the group consisting of NaCl, CaCl₂, and MgCl₂.

45. The method of claim 32, wherein said silica gel is impregnated with the carbon dioxide generator.

150 46. The method of claim 32, wherein said packet further comprises a means for introducing said liquid oxygen uptake accelerator directly onto the oxygen absorber.

47. The method of claim 32, wherein said step of introducing said oxygen uptake accelerator directly onto said oxygen absorber includes injecting said oxygen uptake accelerator onto said oxygen absorber.

155 48. The method of claim 47, wherein said step of introducing said oxygen uptake accelerator directly onto said oxygen absorber is carried out using a syringe.

160 49. The method of claim 46, wherein said step of introducing said oxygen uptake accelerator directly onto said oxygen absorber includes placing into said packet a frangible capsule containing the oxygen uptake accelerator, wherein the oxygen uptake accelerator is introduced directly onto the oxygen absorber by rupturing the frangible capsule.